

**TITLE OF THE INVENTION**

**LAMELLA OF A HEADBOX OF A PAPER, CARDBOARD, OR  
TISSUE MACHINE**

**INVENTORS**

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**LAMELLA OF A HEADBOX OF A PAPER, CARDBOARD, OR  
TISSUE MACHINE**

**CROSS-REFERENCE TO RELATED APPLICATIONS**

**[0001]** The present application claims priority under 35 U.S.C. § 119 of German Patent Application No. 100 51 802 2, filed on October 18, 2000, the disclosure of which is expressly incorporated by reference herein in its entirety.

**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

**[0002]** The present invention relates to a lamella of a headbox in, e.g., a paper, cardboard or tissue machine.

**2. Discussion of Background Information**

**[0003]** A lamella of a multi-layered headbox is known to the Applicant from European Patent Application No. EP 0 681 057 A2. In the nozzle of the disclosed headbox, at least one lamella is provided, which maintains the distance of two adjacent suspension flows down to a region of an exit nip. The lamella is formed of plastic with its modulus of elasticity preferably being smaller than about 80,000 N/mm<sup>2</sup>.

**[0004]** As is generally known, the plastic can be a polycarbonate (PC) which has been extremely successful as a material for many modern and technically demanding applications due to its specific characteristics. For example, the high-tech polycarbonate by the company Bayer AG with the trade name Makrolon®, and that of General Electric with the trade name Lexan®, have a global reputation.

**[0005]** The polycarbonate is used for inexpensive lamellae of applications in which the use of expensive lamellae is impossible or not suitable for economic reasons, e.g., in one-layered headboxes in which the lamellae end within the nozzle.

**[0006]** When polycarbonate is used as the material for lamellae, it is

disadvantageous that the connection between the lamella and the headbox (or turbulence generator) must be constructed larger than sometimes desired due to the low stability of the polycarbonate. Additionally, polycarbonate has mechanical, chemical, thermal, and processing disadvantages as well.

**[0007]** Carbon fiber composite materials are better, yet also more expensive materials for lamellae, by which lamellae are produced in several components. The carbon fiber composite materials are particularly suitable in applications with very high requirements concerning shape stability and constancy of the crosswise thickness profile of the streams, in particular in multi-layered headboxes.

**[0008]** Until now, all materials known and used for lamellae for use in headboxes for producing a material web, such as a paper or cardboard web, by at least one fibrous stock suspension, have had in common the fact that they render the lamellae sensitive to the influence of mechanical forces, such as, e.g., during handling. Furthermore, they have a low resistance to high temperatures and alkaline solutions during cleaning of the headbox by "boil out." Additionally, the service life of the lamellae is reduced due to the cited properties of the materials mentioned above.

#### SUMMARY OF THE INVENTION

**[0009]** Therefore, the present invention provides a headbox of the type generally discussed at the outset in which a lamella is provided with a better expense/effectiveness ratio for all possible utilizations and better withstands different operating conditions.

**[0010]** Accordingly, the present invention is directed to a headbox that includes a lamella constructed of at least one high-performance polymer, having high stability, high heat resistance, and good to very good resistance to alkaline solutions and/or acids.